ZOBEX
Model S-11 Computer

The ZOBEX Model S-11 runs the industry standard CP/M® and MP/M® operating systems with a 4 MHz Z80A cpu, thus making available a tremendous variety of high-performance software.

The S-11 will handle up to 8 simultaneous users plus a printer or two [when running MP/M], and can handle from 65K to 400K of our field-proven and reliable memory.

And the S-11 doesn't take up valuable table-top work space which you need for your terminals, listings, and elbow room. Instead it sits on the floor next to your desk, and since it's the same height, it expands your work area instead of cramping your style. That extra table space makes an amazing difference in your comfort and productivity.

The eight inch double sided double density disk drives are conveniently located where they are close at hand. Hard disks are also available, in 12.7, 20 and 40 million byte capacities.

Our beautiful blue cabinet measures only 20 x 12 x 28 inches high, and is solidly built of steel. It houses a heavy duty 18 amp power supply that has plenty left for expansion to hard disks in the future. And the S-11 is QUIET, runs cool, and won't blow hot air in your face.
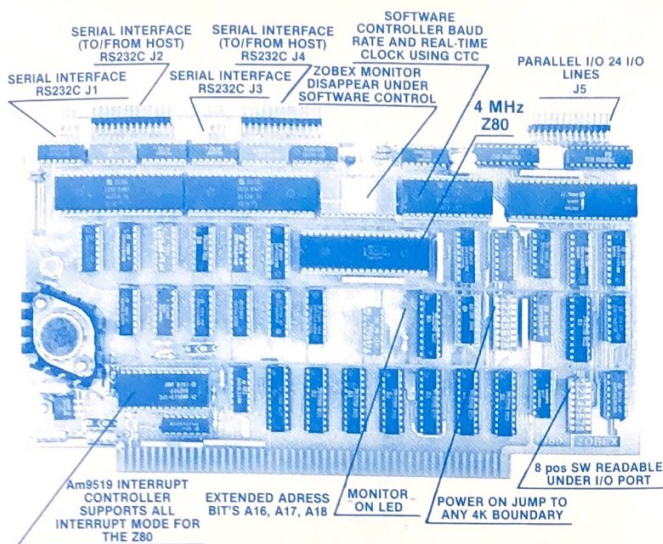
The main electronics consists of three IEEE S-100 boards, the CPU, double density disk controller, and memory. All of these are rock-solid and well tested. Our CPU has more capability and flexibility than any other currently available, and its four serial ports, real-time clock, and interrupt controller make CP/M and MP/M run at top efficiency.

Our DMA double density disk controller gives you 630,784 bytes on each side of a diskette. The phase-locked loop data separator handles a wide range of timing errors, and that's what gives us excellent reliability. We supply the CP/M BIOS and MP/M XIOS software.

The CP/M or MP/M operating system is supplied with the computer. We include disk diagnostics, and disk formatting programs too.

Our experience with the reliability of our products gives us the confidence to offer the longest warranty period in the micro-industry [six months], during which we'll fix or replace anything which doesn't work right which is not your fault. And for after-warranty service, we maintain a stock of exchange boards which we can ship within 24 hours of your distress, and get you back on the air very quickly.

The ZOBEX S-11 is an IEEE 696 S-100 standard bus computer with eleven slots, so there is room for future expansion.

SERIAL INTERFACE (TO/FROM HOST) RS232C J2
SERIAL INTERFACE (TO/FROM HOST) RS232C J4
SOFTWARE CONTROLLER BAUD RATE AND REAL-TIME CLOCK USING CTC
SERIAL INTERFACE RS232C J1
SERIAL INTERFACE RS232C J3
ZOBEX MONITOR DISAPPEAR UNDER SOFTWARE CONTROL
PARALLEL I/O 24 I/O LINES J5
4 MHz Z80
Am9519 INTERRUPT CONTROLLER SUPPORTS ALL INTERRUPT MODE FOR THE Z80
EXTENDED ADRESS BIT'S A16, A17, A18
MONITOR ON LED
POWER ON JUMP TO ANY 4K BOUNDARY
8 pos SW READABLE UNDER I/O PORT

ZOBEX CPU

The ZOBEX CPU is an IEEE standard S-100 module that incorporates processor, I/O, real-time clock, and PROM features, all on one board. It is adaptable to a wide variety of home and OEM applications.

CHARACTERISTICS AND FEATURES

Z-80A, CPU, with 4MHz clock.

Compatible with the IEEE S-100 bus standard.

Switch-selectable power-on jump, to any 4K boundary.

Software-readable, 8-pole switch, for setting options such as baud rate, terminal type, etc.

On-board EPROM can be made to disappear under program control, thus mak-ing the entire 64K of address space available when desired.

Four on-board serial ports featuring total software control of modes, modem signals and baud rates to 38,400 baud.

Three parallel ports, using 8255 PPI; centronics parallel interface compatible.

Real-time clock, using the ZILOG CTC, interrupts the CPU at software-selectable rates. This board will run modern interrupt driven operating systems such as *MP/M, with no external circuitry.

Six months warranty
* on parts and labor *

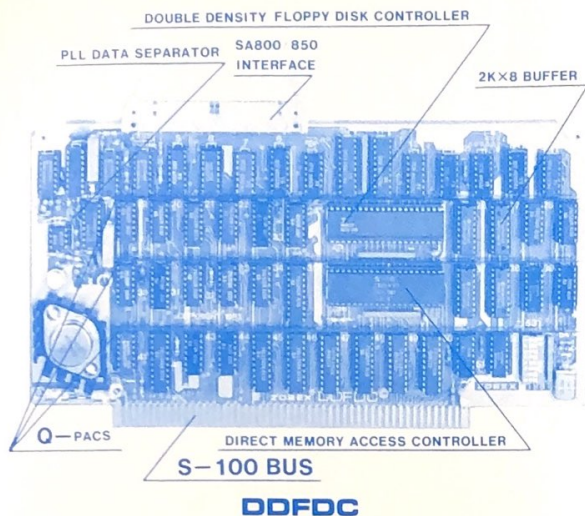* MP/M is a Trademark of Digital Research.
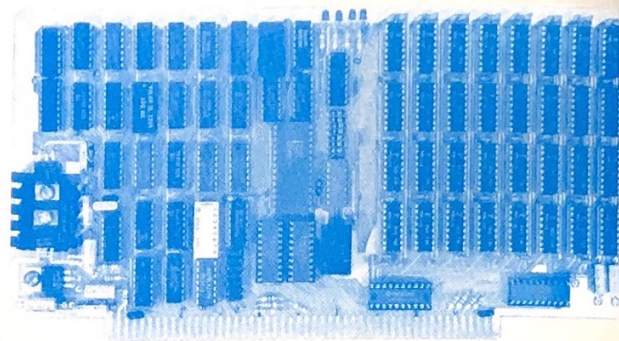
ZMS-100

The ZOBEX ZMS 100 64K ram board is a high-speed dynamic memory for all S-100 computers. It meets the new IEEE standard for S-100 devices, and also operates with all pre-standard S-100 computers.

CHARACTERISTICS and FEATURES

Meets new IEEE standard for S-100 slaves

4 MHz operation

Totally invisible refreshing — no wait states

Full, unlimited DMA operation, in bytes or bursts — really works with DMA disk controllers —

Low power requirements — less than 8 Watts

Fully compatible with Cromemco, North Star, Delta, etc.

De-selectable via Phantom line [bus pin 67]

Bank selection via I/O port or IEEE extended address bits

Switch addressable to any of 256 I/O ports.

Six months parts and labor warranty.

Our versatile memory mapping feature permits your software to change the location of any 16K section on any board at any time. Any section can be addressed in any or all of the 8 banks, giving a total memory space of over 512,000 bytes. This is done through an output port which you can switch-select to be any of the 256 ports in your computer. And you can use the IEEE extended address bits, too.

PLL DATA SEPARATOR — DOUBLE DENSITY FLOPPY DISK CONTROLLER — SA800 850 INTERFACE — 2K×8 BUFFER — Q—PACS — DIRECT MEMORY ACCESS CONTROLLER — S—100 BUS

DDFDC

Our ZOBEX Model DDFDC meets IEEE standard for S-100 modules. The dual-density disk controller board gives you as much as 630,784 bytes on each side of a diskette. We supply the CP/M BIOS testing and formatting software with each board, so you won't have to do any development.

We use the most recent LSI devices from Western Digital and Zilog, and use them in a resourceful manner to maximize performance. For example, our DMA circuitry allows you to keep the CPU working on something else while you transfer data to and from the disk at a higher speed than the CPU.

A 2,000 byte ram memory is included on the controller board to provide data buffering that improves performance considerably.

If your present memory can't handle DMA, the DDFDC can also work through I/O ports like the old single density units did.

Our Phase-locked loop data separator handles a wide range of timing errors, and that's what gives us excellent reliability. We handle double-sided disks as well, and our DMA works with both IEEE spec memories (like our ZMS-100 memory) and our earlier ZS-800 memories.

The software interface is simple and our manual describes the software interface in full.

The port addresses are switch selectable.

HEX-ASCII TABLE

00	NUL	21	!	42	B	63	c
01	SOH	22	"	43	C	64	d
02	STX	23	#	44	D	65	e
03	ETX	24	$	45	E	66	f
04	EOT	25	%	46	F	67	g
05	ENQ	26	&	47	G	68	h
06	ACK	27	'	48	H	69	i
07	BEL	28	(	49	I	6A	j
08	BS	29	)	4A	j	6B	k
09	HT	2A	*	4B	K	6C	l
0A	LF	2B	+	4C	L	6D	m
0B	VT	2C	,	4D	M	6E	n
0C	FF	2D	-	4E	N	6F	o
0D	CR	2E	.	4F	O	70	p
0E	SO	2F	/	50	P	71	q
0F	SI	30	0	51	Q	72	r
10	DLE	31	1	52	R	73	s
11	DC1 [X-ON]	32	2	53	S	74	t
12	DC2 [TAPE]	33	3	54	T	75	u
13	DC3 [X-OFF]	34	4	55	U	76	v
14	DC4	35	5	56	V	77	w
15	NAK	36	6	57	W	78	x
16	SYN	37	7	58	X	79	y
17	ETB	38	8	59	Y	7A	z
18	CAN	39	9	5A	Z	7B	{
19	EM	3A	:	5B	[	7C	l
1A	SUB	3B	;	5C	/	7d	}
1B	ESC	3C	<	5D	]		[ALT MODE]
1C	FS	3D	=	5E	[↑]	7E	~
1D	GS	3E	>	5F	_ [←]	7F	DEL
1E	RS	3F	?	60	`		[RUB OUT]
1F	US	40	@	61	a		
20	SP	41	A	62	b		

CONTENTS

ZOBEX, a California Corporation, is San Diego based and has been in operation for over five years. We are responsible for every step in the development of the production line from designing, to manufacturing, and finally to the distribution of the end-product.

We are proud to introduce to you the ZOBEX line of products which ranges from complete computer systems, to add-on I/O and memory boards.

We invest in top quality parts and excellent workmanship in order to assure you that your investment in ZOBEX will provide you with the efficient, reliable, and high performance products that you expect and deserve.

Our confidence in ZOBEX enables us to support our product line with warranties ranging from six months up to one full year.

To place your order call or write to:

ZOBEX
7343-J Ronson Rd.
San Diego, CA 92111
(619) 571-6971
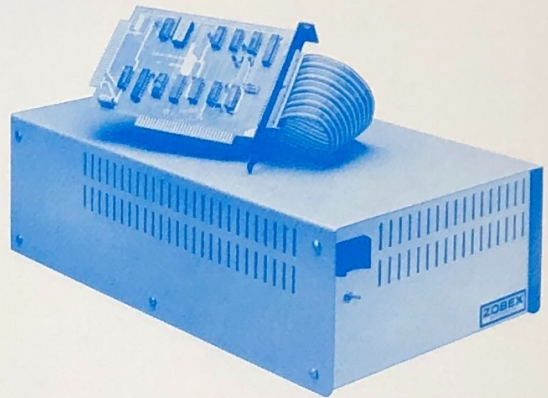
HARD-DISK SUBSYSTEM

The ZOBEX HARD-DISK SUBSYSTEM for the IBM PERSONAL Computer or for the S-100 Computer, is a complete plug-in unit compatible with the IBM Operating System version PC DOS 1.1 or 2.0 for the IBM PERSONAL Computer, and the DIGITAL RESEARCH CP/M 2.2 for the S-100 Computer

The subsystem consists of an attractive free-standing enclosure, 4.5 by 8.5 by 15 inches, containing the disk controller and hard disk, an interface board and interfacing cable set.

The enclosure houses an integral power-supply, an AC line filter, a Winchester disk controller and a 5-1/4 inch Winchester disk drive. The disk is available in either 12.72 megabytes or 20 megabytes capacity unformatted.

FEATURES OF THE DISK CONTROLLER
Built-in Data Separator
Built-in Write Precompensation Logic
Data Transfer Rates up to 5 Mbits/sec
Control up to 4 Drives
1024 Cylinder Addressing Range
CRC Generation/Verification
Automatic Formatting
128, 256, 512 Bytes/Sector
Overlap Seek Capability
8 Bit Host Interface
Error Detection and Correction

6 Month WARRANTY
NOTE — In the second half of 1983, higher capacity drives and DEC compatible controller will be available.

256K MEMORY WITH PARITY BIT
MEMORY SELECT SW
MEMORY SELECT LED
Q—PACS
Q—PACS
IBM PC BUS
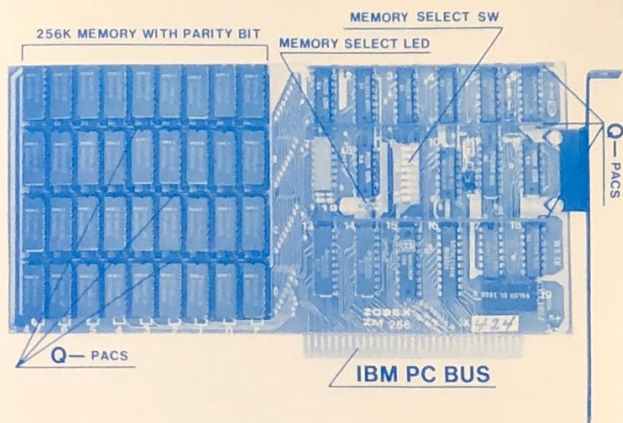
ZM 256

The ZOBEX ZM 256 — 256K Byte RAM memory board for the IBM PERSONAL Computer is a compact, economical solution to memory expansion. The ZM 256 board is small (only 4 by 8.5 inches) and takes only one chassis slot in the IBM PERSONAL Computer mainframe. It can be used as the only memory in the system or can be mixed freely with IBM memory.

The ZOBEX ZM 256 board incorporates a unique address decoding scheme implemented via an on-board dip switch pack which allows each 64K byte segment of memory on the board to be disabled or origined at any 64K boundary between 0 and 1 megabyte. This scheme allows the board to be added into an IBM PERSONAL Computer with 64K types of memory on the CPU board without memory conflicts.

The ZOBEX ZM 256 board is factory assembled, burned in and fully tested to be compatible with all IBM PERSONAL Computer products.

Memory Capacity: 256 K Bytes
Memory Access Time: 200 Nanoseconds
Power Requirement: 0.5 A
WARRANTY:
ONE YEAR FROM PURCHASE DATE
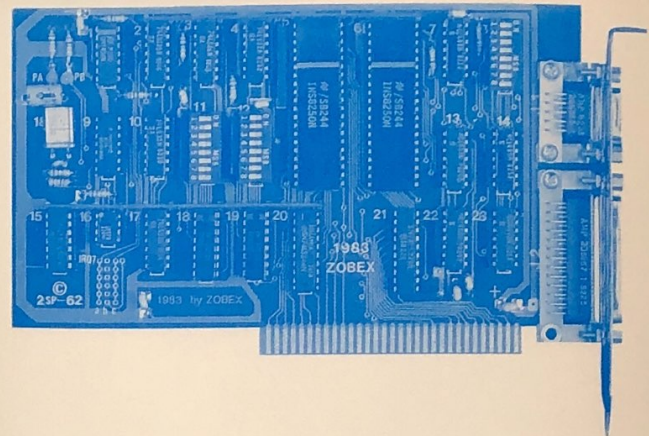
2SP

The ZOBEX 2 Serial Port board is designed for the IBM PERSONAL Computer and is completely software compatible with the IBM Asynchronous Communication Adapter board.
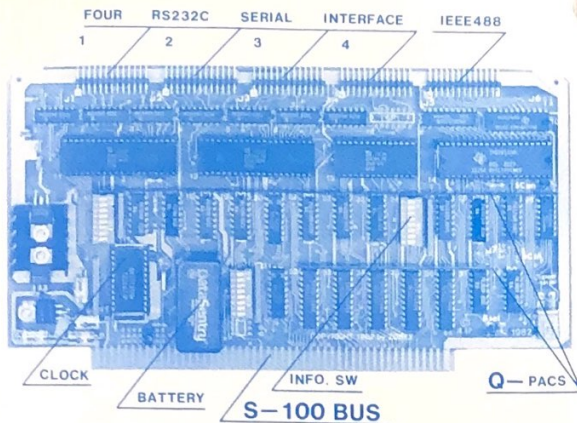
CHARACTERISTICS and FEATURES

2 SP board includes 2 RS232 serial interface from which one can be used as a current loop interface.

I/O ports are independently selectable from each other On-board LED's provide visual cues regarding status of communication adapter

The adapter supports Asynchronous Communications

A programmable baud rate generator allows operation from 50 to 9600 baud. Five, six, seven or eight bit characters with 1, 1-1/2, or 2 stop bits are supported.

FOUR RS232C SERIAL INTERFACE IEEE488
1 2 3 4

CLOCK BATTERY INFO. SW S—100 BUS Q—PACS

4SP

The ZOBEX 4 Serial Port board is an IEEE standard S-100 serial I/O board that incorporates 4 RS232 serial channels, a clock with battery backup, and IEEE 488 interface.

CHARACTERISTICS and FEATURES

Meets new IEEE standard for S-100 slaves

Has low power requirements

I/O Ports are switch-selectable

Extended address bits can be used for increased I/O space

On-board software-readable 8-pole switch for setting options such as baud rate and IEEE 488 communication modes, etc.

Real time-clock provides accurate time and date regardless of whether the computer is ON or OFF

IEEE 488 interface is used to provide communication with highly sophisticated instruments and measuring devices, and can be used as controller, talker, or listener

4 Serial Port provides 4 RS232 communication between CRT's, printers, modems, etc.

Board includes high capacitance power distribution elements which protect TTL and MOS components from noisy fluctuating power supplies

* 1 year WARRANTY *

WD 100X INTERFACE

CENTRONICS PARALLEL INTERFACE I/O PORT SELECT SW

POWER FOR WD 100X S—100 BUS
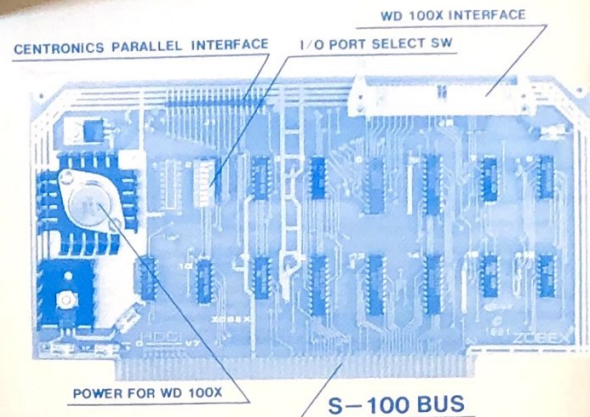
HDCI

The Hard Disk Controller Interface is a S-100 IEEE-696 Standard I/O board, to interface a Western Digital Hard Disk Controller to any S-100 Computer.

The HDCI will provide our necessary control and data signals, and, if desired, the power [3Amp max] for the WD100X.

Our Board also has optional centronics parallel interface.

ZOBEX S-11 COMPUTER
I/O PORT ASSIGNMENTS

FUNCTION	PORT	FUNCTION	PORT

CPU

FUNCTION	PORT	FUNCTION	PORT
SERIAL CH. 1		SERIAL CH. 2	
data in/out	00	data/out	02
SERIAL CH. 3		SERIAL CH. 4	
data in/out	10	data in/out	12
status/contr.	11	status/contr.	13
PARALLEL CH. A		PARALLEL CH. B	
data in/out	08	data in/out	09
PARALLEL CH. C		PARALLEL S/C	
data in/out	0A	status/contr.	0B
TIMER CH. 0	04	TIMER CH. 1	05
Baud for Ch. 1 & 3		Baud for Ch. 2	
TIMER CH. 2	05	TIMER CH. 3	07
Baud for Ch. 4		Clock interrupts.	
INFO—SWITCH		EPROM DISABLE	
Data in	0C	Data out	0C
		INTERRUPT CONTR.	
data in/out	0E	control	0F

4SP board

FUNCTION	PORT	FUNCTION	PORT
SERIAL CH. 5		SERIAL CH. 6	
data in/out	14	data in/out	16
status/contr.	15	status/contr.	17
SERIAL CH. 7		SERIAL CH. 8	
data in/out	18	data in/out	1A
status/contr.	19	status/contr.	1B
TIMER CH. 0	1C	TIMER CH. 1	1D
Baud for Ch. 5 & 6		Baud for Ch. 7	
TIMER CH. 2	1E	TIMER CH. 3	1F
Baud for Ch. 8		Clock interrupts.	
REAL TIME CLOCK		Starting Port	
55167A		Address	20
IEEE 488 Int.		Starting Port	
TMS	9914	Address	50
INFORMATION		Port Address	55
SWITCH			

HDCI

FUNCTION	PORT	FUNCTION	PORT
Data in/out	80	Error/Pricomp	81
Sect. C in/out	82	Sect. N in/out	83
Cyl. L in/out	84	Cyl. H. in/out	83
Si. Dr. Head	86	Status/Contr	87
Centronic Parallel		Port in/out	88
Interface			

DDFDC

FUNCTION	PORT	FUNCTION	PORT
Status/Contr	90	Track Reg.	91
Sect. Reg.	92	Data Reg.	93
DMA Reg.	94	Ext. Contr.	95
Wait [in]	96		